Enterasys Matrix™ Security Module

Installation Guide

P/N 9034221-03

enterasys®

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

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Regulatory Compliance Information

Federal Communications Commission (FCC) Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Notice

This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Class A ITE Notice

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Clase A. Aviso de ITE

ADVERTENCIA: Este es un producto de Clase A. En un ambiente doméstico este producto puede causar interferencia de radio en cuyo caso puede ser requerido tomar medidas adecuadas.

Klasse A ITE Anmerkung

WARNHINWEIS: Dieses Produkt zählt zur Klasse A (Industriebereich). In Wohnbereichen kann es hierdurch zu Funkstörungen kommen, daher sollten angemessene Vorkehrungen zum Schutz getroffen werden.

Product Safety

This product complies with the following: UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Seguridad del Producto

El producto de Enterasys cumple con lo siguiente: UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Produktsicherheit

Dieses Produkt entspricht den folgenden Richtlinien: UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Electromagnetic Compatibility (EMC)

This product complies with the following: 47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3.

Compatibilidad Electromágnetica (EMC)

Este producto de Enterasys cumple con lo siguiente: 47 CFR Partes 2 y 15, CSA C108.8, 89/336/EEC, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, VCCI V-3.

Elektro- magnetische Kompatibilität (EMC)

Dieses Produkt entspricht den folgenden Richtlinien: 47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3.

Hazardous Substances

This product complies with the requirements of European Directive, 2002/95/EC, Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment.

European Waste Electrical and Electronic Equipment (WEEE) Notice

In accordance with Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required and that this product was placed on the European market after August 13, 2005, the date of enforcement for Directive 2002/96/EC.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

   For information about the available collection system, please go to www.enterasys.com/services/support/ or contact Enterasys Customer Support at 353 61 705586 (Ireland).

产品说明书附件
Supplement to Product Instructions

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	×	○	○	×	○	○
电路模块 (Circuit Modules)	×	○	○	×	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	×	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	×
电路开关 (Circuit Breakers)	○	○	×	×	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

×： 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。
Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11363-2006 standard.

对销售之日的所售产品，本表显示，
凯创供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。
This table shows where these substances may be found in the supply chain of Enterasys' electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

除非另外特别的标注，此标志为针对所涉及产品的环保使用期标志. 某些零部件会有一个不同的环保使用期（例如，电池单元模块）贴在其产品上.
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.
The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

VCCI Notice

This is a class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

BSMI EMC Statement — Taiwan

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種請況下，使用者會被要求採取某些適當的對策。

Safety Information
Class 1 Laser Transceivers

The single mode interface modules use Class 1 laser transceivers.
Read the following safety information before installing or operating these modules.

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 Laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55 x 10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or 8 x 10^{3} W m^{2} sr-1.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

The Matrix Security Module meets the following safety and electromagnetic compatibility (EMC) requirements:

Regulatory Compliance	Standards
Safety	UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10
Electromagnetic Compatibility (EMC)	47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3

Declaration of Conformity

Application of Council Directive(s):	**89/336/EEC** **73/23/EEC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Address:	**Enterasys Networks, Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 89/336/EEC** **EN 55022** **EN 61000-3-2** **EN 61000-3-3** **EN 55024** **EC Directive 73/23/EEC** **EN 60950** **EN 60825**
Equipment Type/Environment:	**Networking Equipment, for use in a Commercial or Light Industrial Environment.**

Enterasys Networks, Inc. declares that the equipment packaged with this notice conforms to the above directives.

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10. **ENFORCEMENT.** You acknowledge and agree that any breach of Sections 2, 4, or 9 of this Agreement by You may cause Enterasys irreparable damage for which recovery of money damages would be inadequate, and that Enterasys may be entitled to seek timely injunctive relief to protect Enterasys' rights under this Agreement in addition to any and all remedies available at law.

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(b) Sections 4, 5, 7, 8, 9, 10, 11, and 12 shall survive termination of this Agreement for any reason.

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11. **JURISDICTION**. The rights and obligations of the parties to this Agreement shall be governed and construed in accordance with the laws and in the State and Federal courts of the Commonwealth of Massachusetts, without regard to its rules with respect to choice of law. You waive any objections to the personal jurisdiction and venue of such courts.

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(a) This Agreement shall not be assignable by You without the express written consent of Enterasys. The rights of Enterasys and Your obligations under this Agreement shall inure to the benefit of Enterasys' assignees, licensors, and licensees.

(b) Section headings are for convenience only and shall not be considered in the interpretation of this Agreement.

(c) The provisions of the Agreement are severable and if any one or more of the provisions hereof are judicially determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions of this Agreement shall nevertheless be binding on and enforceable by and between the parties hereto.

(d) Enterasys' waiver of any right shall not constitute waiver of that right in future. This Agreement constitutes the entire understanding between the parties with respect to the subject matter hereof, and all prior agreements, representations, statements and undertakings, oral or written, are hereby expressly superseded and canceled. No purchase order shall supersede this Agreement.

(e) Should You have any questions regarding this Agreement, You may contact Enterasys at the address set forth below. Any notice or other communication to be sent to Enterasys must be mailed by certified mail to the following address: ENTERASYS NETWORKS, INC., 50 Minuteman Road, Andover, MA 01810 Attn: Manager - Legal Department.

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About This Guide

This guide provides the instructions to install the 7S-NSTAG-01, 7S-NSTAG-01-NPS, 7S-DSNSA7-01, and the 7S-DSNSA7-01NPS Enterasys Matrix™ Security Module.

Intended Audience

This document is intended for experienced network administrators who are responsible for installing and setting up the Enterasys Matrix™ Security Module.

Typographical Conventions

The following typographical convention, and icons, are used in this document.

blue type	Indicates a hypertext link. When reading this document online, click the text in blue to go to the referenced figure, table, or section.
	Electrical Hazard: Warns against an action that could result in personal injury or death. **Riesgo Electrico:** Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico. **Elektrischer Gefahrenhinweis:** Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!
	Caution: Contains information essential to avoid damage to the equipment. **Precaución:** Contiene información esencial para prevenir dañar el equipo. **Achtung:** Verweißt auf wichtige Informationen zum Schutz gegen Beschädigungen.
	Note: Calls the reader's attention to any item of information that may be of special importance.

Getting Help

For additional support related to the module or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/services/support/
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-978-684-1000 For the Enterasys Networks Support toll-free number in your country: http://www.enterasys.com/services/support/contact/
Internet mail	**support@enterasys.com** To expedite your message, please type [**switching**] in the subject line.
To send comments or suggestions concerning this document to the Technical Publications Department: **techpubs@enterasys.com** To expedite your message, please include the document Part Number in the email message.	
For Enterasys Sentinel Trusted Access Gateway documentation, go to: http://www.enterasys.com/support/manuals/sentinel.html For Dragon documentation, go to: https://dragon.enterasys.com **Note:** If you don't already have a user account on the Dragon support site, you will need to create one.	

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (for example, changing mode switches, rebooting the unit)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (for example, layout, and cable type)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem)
- Any previous Return Material Authorization (RMA) numbers

1

Matrix Security Module

Overview

The Matrix Security Module has two main components:

- A Linux server based on the Intel 1.4 GHz Pentium M processor, with 1 GB of memory and a 2.5-inch 60-GB hard drive
- A two-port Mini-GBIC Gigabit Ethernet Uplink Module

The Matrix Security Module must be installed on an Enterasys Matrix DFE module containing a network expansion module slot. Refer to Appendix A, Specifications for a list of Matrix DFE modules that support the Matrix Security Module.

Note: Before installing the Matrix Security Module, refer to the DFE module's firmware release notes for hardware and firmware support of the Matrix Security Module.

The Linux server is pre-installed with either the Dragon Intrusion Defense System application, or the Enterasys Sentinel Trusted Access Gateway (TAG) application. Refer to the Dragon Intrusion Defense System Software or the Enterasys Sentinel Trusted Access Gateway documentation for instructions on how to use the software installed on the Linux server, as described in "Getting Help" on page xx.

In addition to the two external mini-GBIC Gigabit ports on the Matrix Security Module, there are two internal Gigabit ports that connect the DFE module and the on-board processor, for a total of four Gigabit Ethernet ports. The internal Gigabit Ethernet ports have the same capabilities as the two external ports on the Matrix Security Module as well as the ports on the DFE module. For additional information on these ports, refer to Refer to Appendix A, **Specifications**.

The Matrix Security Module is an integral component of the following products.

- Enterasys Sentinel Trusted Access Gateway, model numbers:
  - 7S-NSTAG-01 (includes external power supply kit)
  - 7S-NSTAG-01-NPS

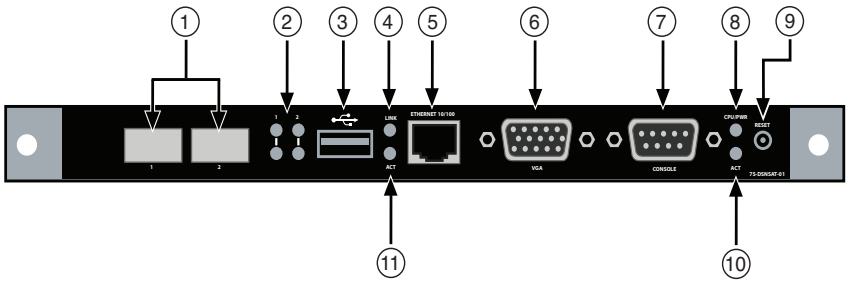
- Dragon Network Intrusion Defense System, model numbers:
  - 7S-DSNSA7-01 (includes external power supply kit)
  - 7S-DSNSA7-01NPS

The type of DFE module into which the Matrix Security Module will be installed determines whether an external power supply kit is required.

If the DFE module has an internal power supply connection mounted to the board, the necessary DC power will be supplied internally to the Matrix Security Module from the DFE module, and an external power supply kit is not required. Refer to Figure 1-1 on page 1-2 for an illustration of the front panel of the Matrix Security Module shipped with 7S-NSTAG-01-NPS and 7S-DSNSA7-01NPS, which do not include the external power supply kit.

If the DFE module does not have the internal power supply connection mounted to the board, then power must be supplied externally to the Matrix Security Module, and the models including an external power supply kit should be ordered. Refer to Figure 1-2 on page 1-3 for an illustration of the front panel of the Matrix Security Module shipped with 7S-NSTAG-01 and 7S-DSNSA7-01.

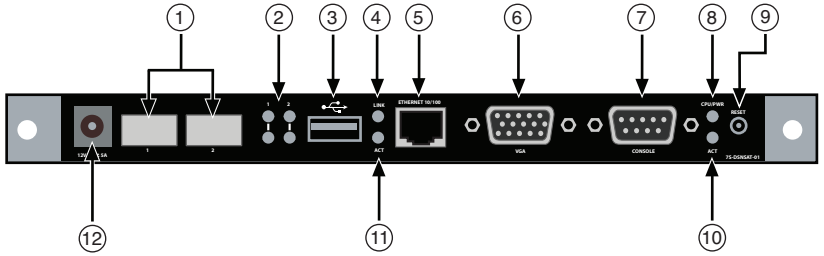
Figure 1-1 Module Front Panel – 7S-NSTAG-01-NPS and 7S-DSNSA7-01NPS



1	Mini-GBIC Gigabit port slots (2)	**7**	RS232 serial COM port
2	Gigabit port link/activity LEDs	**8**	CPU power LED
3	USB port	**9**	CPU reset button
4	10/100 Ethernet port link LED	**10**	Hard drive activity LED
5	10/100 Ethernet port (see **Note** below)	**11**	10/100 Ethernet port activity LED
6	VGA port		

Note: The front panel Ethernet port is designed to connect to the DFE module. Do not connect a PC directly to the Ethernet port. To connect your PC, use a repeater or a hub.

Figure 1-2 Module Front Panel – 7S-NSTAG-01 and 7S-DSNSA7-01



1	Mini-GBIC Gigabit port slots (2)	**7**	RS232 serial COM port
2	Gigabit ports link/activity LEDs	**8**	CPU power LED
3	USB port	**9**	CPU reset button
4	10/100 Ethernet port link LED	**10**	Hard drive activity LED
5	10/100 Ethernet port (see **Note** below)	**11**	10/100 Ethernet port activity LED
6	VGA port	**12**	External power supply connector

Note: The front panel Ethernet port is designed to connect to the DFE module. Do not connect a PC directly to the Ethernet port. To connect your PC, use a repeater or a hub.

LANVIEW Diagnostic LEDs

The Matrix Security Module uses a built-in visual diagnostic and status monitoring system called LANVIEW. The LANVIEW LEDs allow quick observation of the network status to aid in diagnosing network problems. Refer to “Using LANVIEW Diagnostic LEDs” on page 2-16 for information about using the LEDs for troubleshooting.

2

Installation

This chapter provides the pre-installation requirements, and the installation procedures for the following:

- Matrix Security Module (MSM)
- Optional Mini-GBICs

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

Important Notice

- The Matrix N-Series DFE module must be running Version 5.31.17, or higher.
- For Enterasys Dragon Intrusion Defense System Release Notes, go to https://dragon.enterasys.com
- For Enterasys Sentinel Trusted Access Gateway Release Notes, go to http://sweval.enterasys.com

Follow the order of the sections in this chapter to correctly install the Matrix Security Module.

Pre-Installation

Installation Site Requirements

The Matrix Security Module must be installed on an Enterasys Matrix DFE module containing a network expansion module slot, and located in a Restricted Access Location (RAL). This location should be accessible only to qualified personnel who are trained or are technically competent enough to be aware of potential risks of accessing the hazardous areas of the chassis. Locations such as a locked wiring closet or locked cabinet meet this requirement.

Refer to Appendix A, "**Specifications"** for a list of Matrix DFE modules that support the Matrix Security Module.

Warning: Install this module on an Enterasys Matrix DFE module that has been installed in a Restricted Access Location only. Access to the equipment by users must be restricted through the use of a tool or lock and key or other means of security and is controlled by the authority responsible for the location.

Advertencia: Instalar este modulo en un Enterasys Matrix DFE modulo que ha sido localizado en un lugar de Acceso Restringido. Aceso al equipo debe ser restringido por el responsable del sitio.

Warnhinweis: Installieren Sie dieses Modul nur in einem Enterasys Matrix DFE Modul, wenn sich diese in einer zugangsgeschützten Umgebung befinden. Der Bereich zu den Komponenten sollte durch ein Schloß, einen Schlüssel older songster Scrounging gesticulate fund durch einen Verantwortlichen kontrolliert werden.

Required Tools

A Phillips screwdriver is required to install the Matrix Security Module on the Enterasys Matrix DFE module.

Unpacking the Module

Unpack the module as follows:

1. Open the box and remove the packing material protecting the Matrix Security Module.
2. Verify the contents of the carton as per the packing list.
3. Remove the tape seal on the non-conductive bag to remove the module.
4. Perform a visual inspection of the module for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to "Getting Help" on page xx for details.

Installation

Install the Matrix Security Module

Installing the Matrix Security Module involves

- removing the safety cover from the DFE module (if applicable),
- removing the coverplate from the DFE module,
- verifying whether or not the DFE module has internal power supply connections (installing in a DFE module without internal power supply connections requires the external power supply kit),
- installing the Matrix Security Module,
- if required, installing the external power supply kit,
- if desired, installing the Mini-GBICs, and
- replacing the safety cover.

Caution: An antistatic wrist strap is required to perform the following procedures to minimize ESD damage to the devices involved.

Precaución: Para minimizar los efectos de las descargas de electricidad estática, deberá utilizar una pulsera antiestática al realizar los siguiente procedimientos.

Removing the Safety Cover (if applicable)

Currently the safety cover is being shipped only with the Power Over Ethernet (POE) DFE modules. For modules that do not have a safety cover, proceed to "Removing the Coverplate" on page 2-5.

Warning: The safety cover protects you from exposure to an energy hazard in excess of 240 Volt-Amperes. Never operate the DFE module without the safety cover installed.

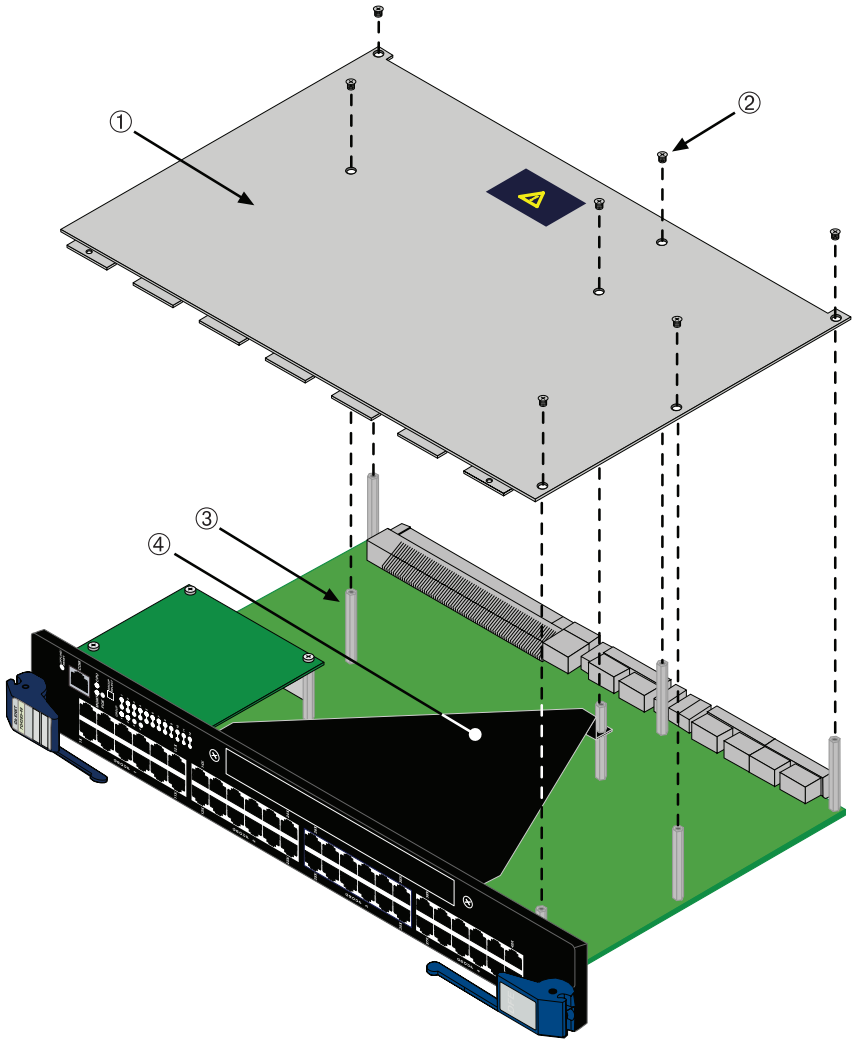
Advertencia: La cubierta de seguridad lo protege de exponerlo al riesgo de energía en exceso de 240 Volt-Amperes. Nunca se debe opererar el modulo de DFE sin la cobertura de seguridad instalada.

Warnhinweis: Die Sicherheitsabdeckung schützt vor Stromstössen von bis zu 240 VA. Bitte nehmen Sie niemals die DFE Module ohne die Abdeckung in Betrieb.

Refer to Figure 2-1, and perform the following steps:

1. Attach the antistatic wrist strap (refer to the instructions on the antistatic wrist strap package).
2. Place the DFE module on an antistatic pad on a sturdy flat surface.
3. Remove the seven screws fastening the safety cover to the seven standoffs on the main board. Save all screws for later use to reinstall the safety cover.

Figure 2-1 Removing the Safety Cover



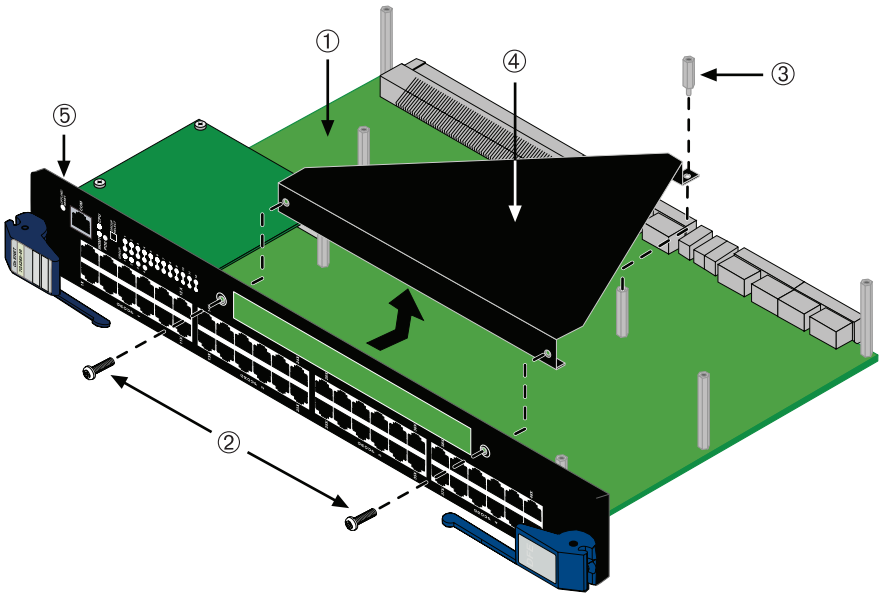
1 Safety cover
2 Screws (7)
3 Standoffs (7)
4 Coverplate

Removing the Coverplate

Refer to Figure 2-2, and perform the following steps:

1. Attach the antistatic wrist strap (refer to the instructions on the antistatic wrist strap package).

Figure 2-2 Removing the Coverplate



1 DFE module main board
2 Coverplate screws (2)
3 Standoff
4 Coverplate
5 DFE module front panel

2. Remove and save the two coverplate screws fastening the coverplate to the DFE module front panel.
3. Remove and save the standoff fastening the coverplate to the main board.

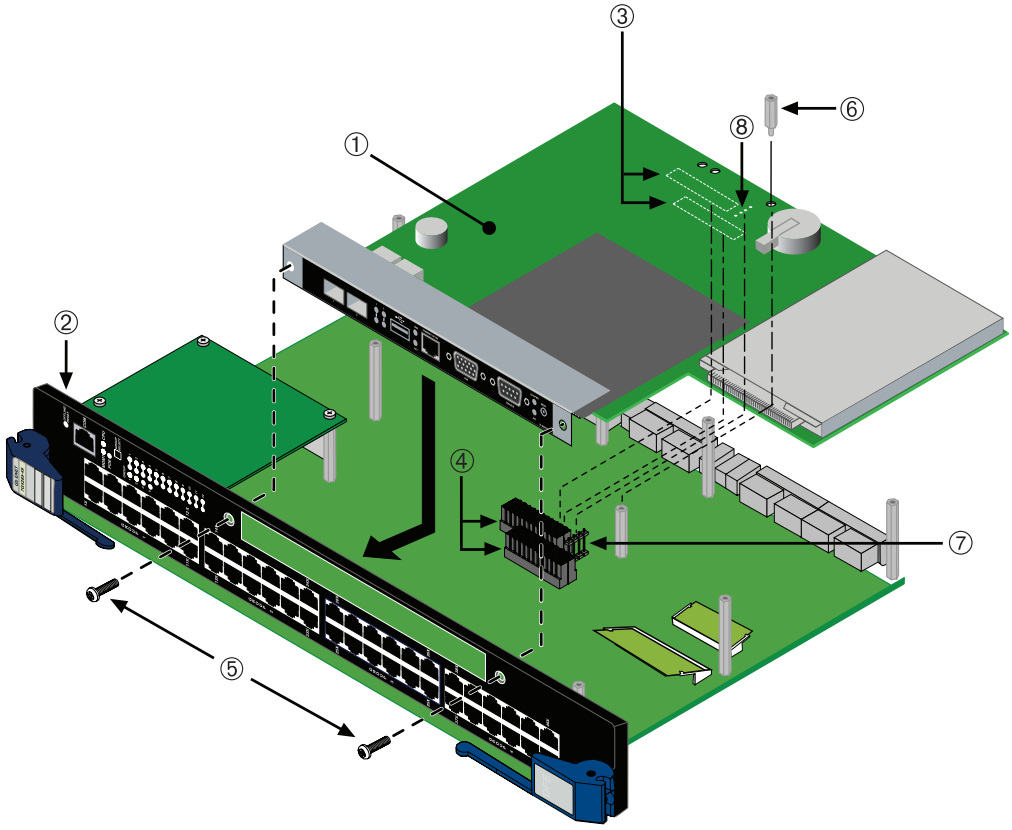
Installation When Internal Power Supplied by DFE Module

This installation procedure applies to the 7S-NSTAG-01-NPS and 7S-DSNSA7-01NPS models.

Refer to Figure 2-3, and perform the following steps:

1. Position the Matrix Security Module (MSM) so its front panel is under the edge of the DFE module front panel.
2. Carefully align the Matrix Security Module connectors with the DFE main board connectors (including the DC power supply connector). Then press straight down over the connectors, applying pressure until they are properly seated.

Figure 2-3 Installing the 7S-NSTAG-01-NPS or 7S-DSNSA7-01NPS



1	Matrix Security Module (MSM)	**4**	DFE main board connectors	**7**	DFE power connector
2	DFE front panel	**5**	Saved screws (2)	**8**	MSM power connector
3	MSM connectors	**6**	Saved standoff		

3. Use two of the saved coverplate screws to fasten the Matrix Security Module to the DFE module front panel, but do not tighten screws at this time.
4. Insert the saved standoff through the Matrix Security Module to the standoff on the main board. Screw in the standoff, but do not tighten screws at this time.
5. Tighten the two coverplate screws first, then the standoff.
6. Reinstall the safety cover if applicable, using the seven screws saved in the procedure "Removing the Safety Cover (if applicable)" on page 2-3.

Warning: The safety cover protects you from exposure to an energy hazard in excess of 240 Volt-Amperes. Never operate the DFE module without the safety cover installed.

Advertencia: La cubierta de seguridad lo protege de exponerlo al riesgo de energía en exceso de 240 Volt-Amperes. Nunca se debe opererar el modulo de DFE sin la cobertura de seguridad instalada.

Warnhinweis: Die Sicherheitsabdeckung schützt vor Stromstössen von bis zu 240 VA. Bitte nehmen Sie niemals die DFE Module ohne die Abdeckung in Betrieb.

7. This completes the Matrix Security Module installation.
8. Refer to "Installing Optional Mini-GBICs" on page 2-12 to install Mini-GBICs into the Matrix Security Module.

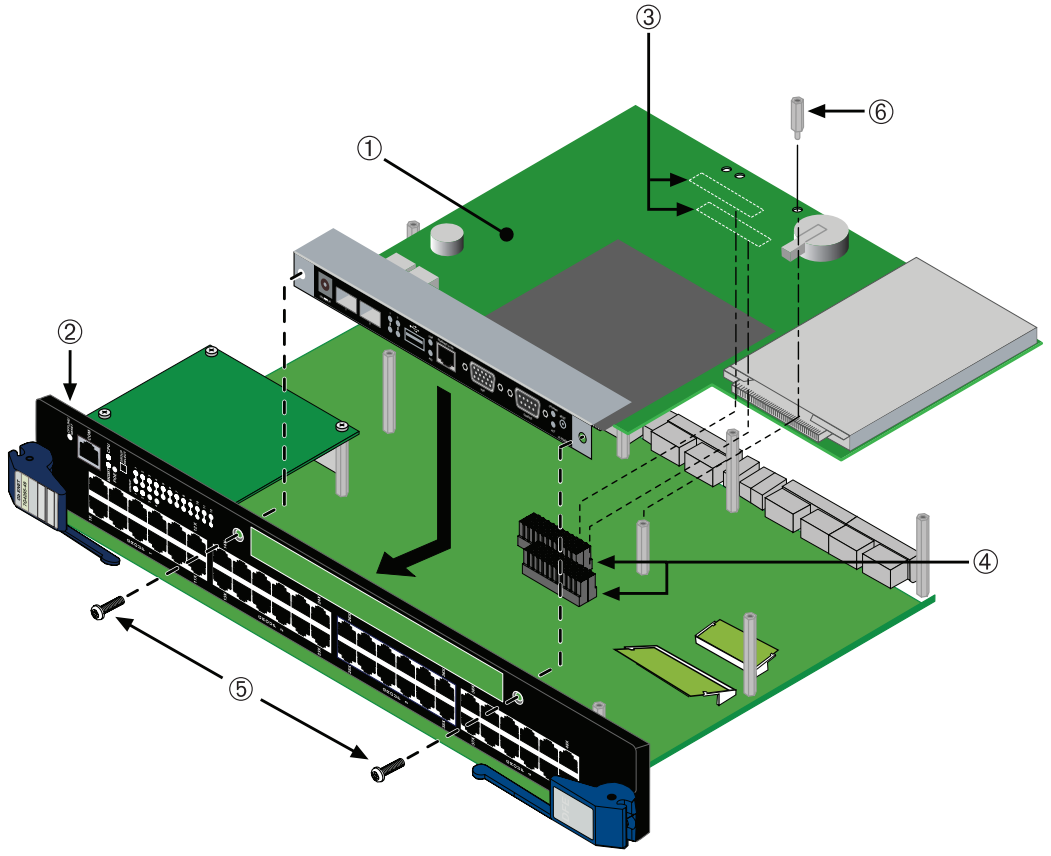
Installation When Internal Power Not Supplied by the DFE Module

This installation procedure applies to the 7S-NSTAG-01 and 7S-DSNSA7-01 models.

Refer to Figure 2-4 on page 2-8, and perform the following steps:

1. Position the Matrix Security Module (MSM) so its front panel is under the edge of the DFE module front panel.
2. Carefully align the two Matrix Security Module connectors with the DFE main board connectors. Then press straight down over the connectors, applying pressure until they are properly seated.
3. Use two of the saved coverplate screws to fasten the Matrix Security Module to the DFE module front panel, but do not tighten screws at this time.
4. Insert the saved standoff through the Matrix Security Module to the standoff on the main board. Screw in the standoff, but do not tighten screws at this time.
5. Tighten the two coverplate screws first, then the standoff.

Figure 2-4 Installing the 7S-NSTAG-01 or 7S-DSNSA7-01



1	Matrix Security Module (MSM)	**3**	MSM connectors	**5**	Saved screws (2)
2	DFE module front panel	**4**	DFE main board connectors	**6**	Saved standoff

6. Reinstall the safety cover if applicable, using the seven screws saved in the procedure "Removing the Safety Cover (if applicable)" on page 2-3.

Warning: The safety cover protects you from exposure to an energy hazard in excess of 240 Volt-Amperes. Never operate the DFE module without the safety cover installed.

Advertencia: La cubierta de seguridad lo protege de exponerlo al riesgo de energía en exceso de 240 Volt-Amperes. Nunca se debe opererar el modulo de DFE sin la cobertura de seguridad instalada.

Warnhinweis: Die Sicherheitsabdeckung schützt vor Stromstössen von bis zu 240 VA. Bitte nehmen Sie niemals die DFE Module ohne die Abdeckung in Betrieb.

7. This completes the Matrix Security Module installation.

   To install the external power supply required by 7S-NSTAG-01 and 7S-DSNSA7-01, proceed to "Installing and Securing the External Power Supply" on page 2-9.

   To install Mini-GBICs into the Matrix Security Module, proceed to "Installing Optional Mini-GBICs" on page 2-12.

Installing and Securing the External Power Supply

This installation procedure applies to the 7S-NSTAG-01 and 7S-DSNSA7-01 models.

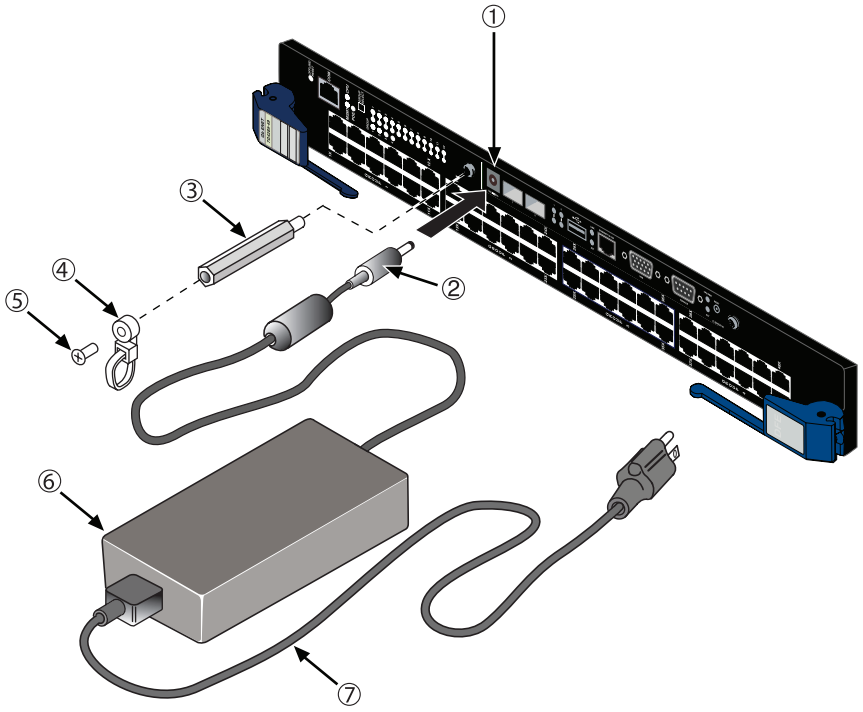
The power supply kit consists of:

- An AC power cord
- An AC-to-DC power adapter and DC connector
- One standoff
- One plastic cable tie

Refer to Figure 2-5 on page 2-10 and proceed as follows:

1. Install the DFE module containing the Matrix Security Module (MSM) into the Enterasys Matrix switch chassis, following the installation instructions contained in the DFE module's *Installation Guide*.
2. Connect the AC-to-DC power supply adapter's connector into the Matrix Security Module's external power receptacle.
3. Screw the supplied standoff into the Matrix Security Module faceplate screw hole.
4. Attach the supplied cable tie to the standoff with the existing faceplate screw.

Figure 2-5 Installing the External Power Supply



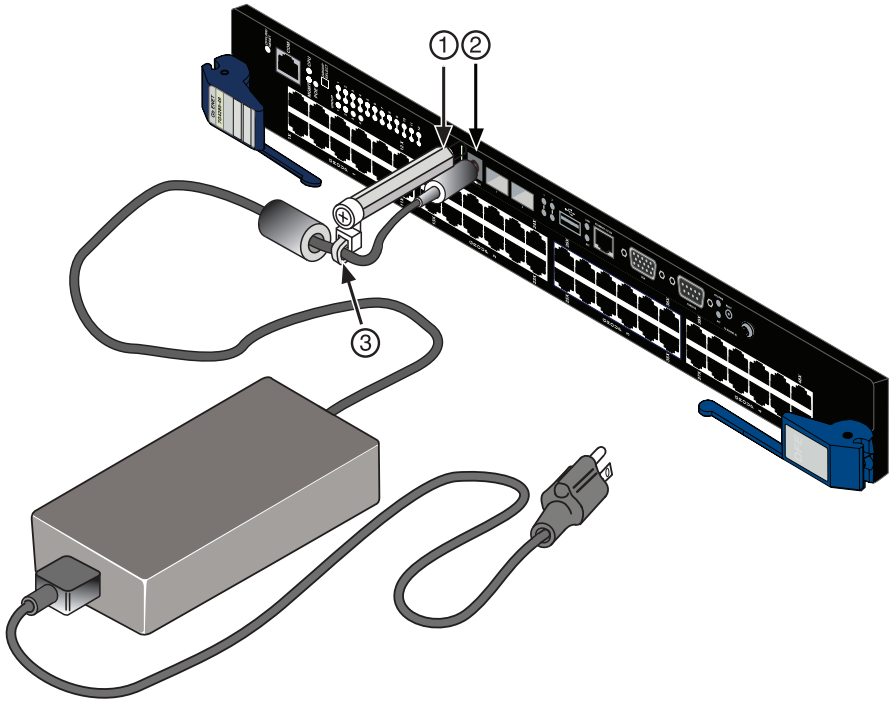
1 External power supply receptacle on MSM	**3** Standoff	**6** Power supply adapter
2 Power supply DC connector	**4** Plastic cable tie	**7** Power supply AC power cord
	5 Faceplate screw	

5. Secure the cable tie to the power supply DC connector cord snugly, then clip off the excess cable tie. Refer to Figure 2-6 on page 2-11 for proper placement of the cable tie onto the power supply connector cord.

   Refer to Figure 2-6 for proper final assembly of the power supply connector cord in which the connector is secured to the faceplate, thus preventing accidental removal of the connector.

6. Plug the AC power cord into a dedicated 115 Vac, 15 A receptacle.

Figure 2-6 External Power Supply Completely Assembled



1 Standoff connected to faceplate.

2 Power supply connector cord inserted in the MSM power supply receptacle.

3 Cable tie secured with faceplate screw and snugly connected to connector cord.

7. This completes the installation of the external power supply kit. To install Mini-GBICs into the Matrix Security Module, proceed to "Installing Optional Mini-GBICs" on page 2-12.

Installing Optional Mini-GBICs

This section describes how to install a Mini-GBIC. For a list of supported Mini-GBICs and their specifications, refer to "Mini-GBIC Input/Output Specifications" on page A-5.

Warning: Fiber-optic Mini-GBICs use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Advertencia: Los Mini-GBICS de fibra optica usan lasers de clase 1. No se debe usar instrumentos opticos para ver la potencia laser El uso de los instrumentos opticos para ver la potencia laser incrementa el riesgo a los ojos. Cuando vean el puerto de la potencia optica, la corriente debe ser removida del adaptador de la red.

Warnhinweis: Mini-GBICs mit Fiber-Optik Technologie benutzen Laser der Klasse 1. Benutzen sie keinesfalls optische Hilfsmittel, um die Funktion des Lasers zu überprüfen. Solche Hilfsmittel erhöhen die Gefahr von Sehschäden. Wenn sie den optischen Port überprüfen möchten stellen Sie sicher, dass die Komponente von der Spannungsversorgung getrennt ist.

Caution: Carefully follow the instructions in this manual to avoid damaging the Mini-GBIC, Ethernet interface module, and DFE-Platinum module.

The Mini-GBIC, Ethernet interface module, and DFE-Platinum module are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to the Mini-GBIC, Ethernet interface module, and DFE-Gold module. Always leave the Mini-GBIC in the antistatic bag or an equivalent antistatic container when not installed.

Precaución: Siga las instrucciones del manual para no dañar el Mini- GBIC, la interface del módulo Ethernet ni el módulo DFE-Platinum, puesto que son muy sensible a las descargas de electricidad estática. Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, podría dañar el Mini-GBIC, la interface el módulo Ethernet o el módulo DFE-Platinum. Mientras no esté instalado, mantenga el Mini- GBIC en su bolsa antiestática o en cualquier otro recipiente antiestático.

To prepare and install a Mini-GBIC, refer to Figure 2-7, Figure 2-8, or Figure 2-9, as appropriate, and proceed as follows:

Preparation

Before installing the Mini-GBIC, perform the following steps:

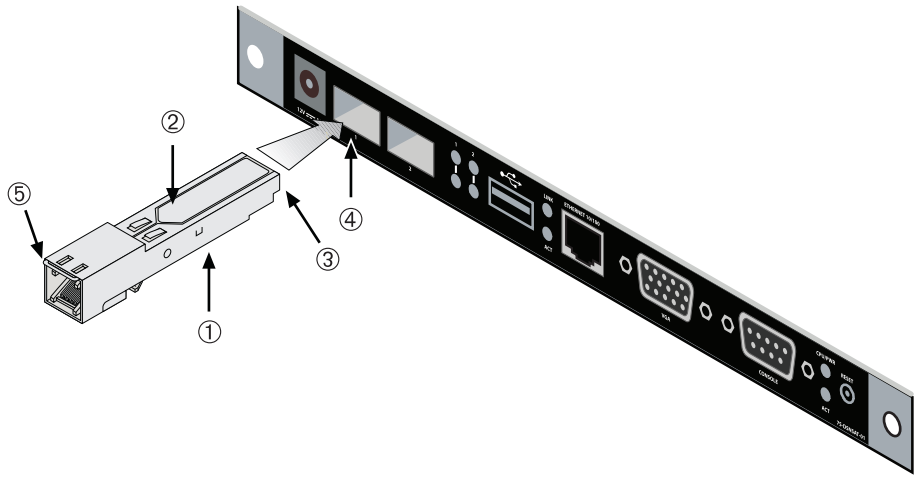
1. Attach the antistatic wrist strap (refer to the instructions in the antistatic wrist strap package) before removing the Mini-GBIC from the antistatic packaging.
2. Remove the Mini-GBIC from the packaging.
3. If there is a protective dust cover (see [**5**] in Figure 2-7 or Figure 2-8) in the Mini-GBIC connector, do not remove it at this time.

Installation

To install a Mini-GBIC with an MT-RJ connection, refer to Figure 2-7; for an LC connection, Figure 2-8; or for an RJ45 connection, Figure 2-9, and then perform the following steps:

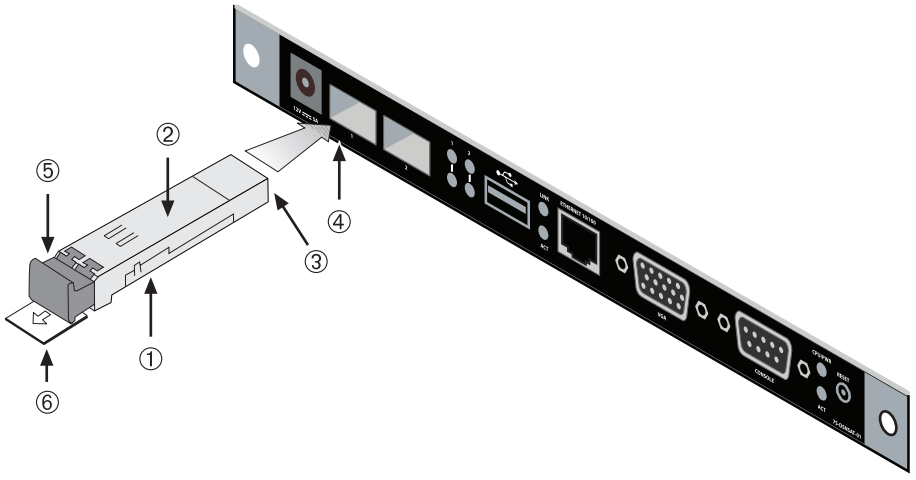
1. Hold the Mini-GBIC with its top side facing up and its 7-pin edge connector facing the port slot.
2. Carefully align the Mini-GBIC with the port slot.
3. Push the Mini-GBIC into the port slot until the Mini-GBIC "clicks" and locks into place.

Figure 2-7 Mini-GBIC with MT-RJ Connector



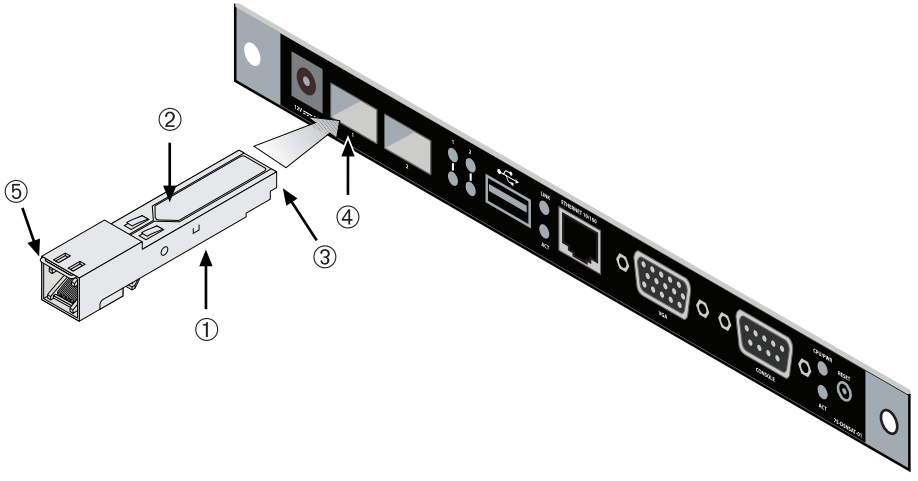
1	Mini-GBIC (MGBIC-MT01)	**4**	Port slot
2	Mini-GBIC, top side	**5**	Mini-GBIC, protective dust cover (Removed)
3	7-Pin edge connector (insertion side)	**6**	Release tab

Figure 2-8 Mini-GBIC with LC Connector



1 Mini-GBIC (MGBIC-LC01 or MGBIC-LC09)
2 Mini-GBIC, top side
3 7-Pin edge connector (insertion side)
4 Port slot
5 Mini-GBIC, protective dust cover
6 Release tab

Figure 2-9 Mini-GBIC with RJ45 Connector



1 Mini-GBIC (MGBIC-02)
2 Mini-GBIC, top side
3 7-Pin edge connector (insertion side)
4 Port slot
5 Wire-handle release

Removing the Mini-GBIC

To remove a Mini-GBIC from a port slot, perform the following steps:

Caution: Do NOT remove a Mini-GBIC from a slot without releasing the locking tab located at the front of the Mini-GBIC. This can damage the Mini-GBIC.

The Mini-GBIC and its host device are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damaging the Mini-GBIC or host device. Always leave the Mini-GBIC in the antistatic bag or an equivalent antistatic container when not installed.

Precaución: NO quite el Mini- GBIC de la ranura sin antes abrir la traba ubicada en la parte frontal del Mini- GBIC.

Si lo hace, puede dañar el Mini- GBIC, puesto que es muy sensible a las descargas de electricidad estática, al igual que el dispositivo host. Utilice la pulsera antiestática y tome todas las precauciones necesarias durante este procedimiento. Si no lo hace, pude dañar el Mini- GBIC o el dispositivo host. Mientras no esté instalado, mantenga el Mini- GBIC en su bolsa antiestática o en cualquier otro recipiente antiestático.

1. Attach the antistatic wrist strap (refer to the instructions in the antistatic wrist strap package) before removing the Mini-GBIC.
2. Remove the cable connected to the Mini-GBIC.
3. Release the Mini-GBIC from the port slot. Refer back to the appropriate figure listed below to locate the release mechanism and proceed as instructed.
   - For the type of Mini-GBIC shown in Figure 2-7, push in on the release tab as far as it will go to release the Mini-GBIC.
   - For the type of Mini-GBIC shown in Figure 2-8, pull out on the release tab to release the Mini-GBIC.
   - For the type of Mini-GBIC shown in Figure 2-9, pull down on the wire handle to release the Mini-GBIC.
4. Grasp the sides of the Mini-GBIC and pull it straight out of the port slot.

If storing or shipping a fiber-optic Mini-GBIC, insert its dust protector to protect its fiber-optic ports.

Using LANVIEW Diagnostic LEDs

The Matrix Security Module uses a built-in visual diagnostic and status monitoring system called LANVIEW. The LANVIEW LEDs allow quick observation of the network status to aid in diagnosing network problems.

Table 2-1 describes the LED indications and provides recommended actions as appropriate.

Note: The terms **flashing** and **solid** used in Table 2-1 indicate the following:

- **Flashing** indicates LED is flashing randomly.
- **Solid** indicates a steady LED light. No pulsing.

Table 2-1 LANVIEW LEDs

LED	Color	State	Recommended Action
Gigabit Ports Link and Activity LEDs			
Lower LED Link and Receive	Off	**No link**. No activity. Port enabled or disabled.	None.
	Green	**Solid**. Link present, port enabled, no traffic is being received by the interface.	None.
	Amber	**Flashing**. Link present, port enabled, traffic is being received by the interface.	None.
Top LED Transmit	Off	Port enabled, but no activity.	If it is known that the port should be active and is not, contact Enterasys Networks for technical support.
	Green	**Flashing**. Indicates data transmission activity. Rate of flashing indicates the data rate.	None.
	Red	**Flashing**. GBIC Fault.	Check for defective GBIC device.
10/100 Ethernet Port Link and Activity LEDs			
Link	Off	**Off**. No activity. Port enabled or disabled.	None.
	Green	**Solid.** Link present, port enabled,	None.

Table 2-1 LANVIEW LEDs (continued)

LED	Color	State	Recommended Action
Activity	Off	**Off**. Link present, port enabled, traffic is not being received by the interface	None.
	Green	**Flashing**. Link present, port enabled, traffic is being received by the interface.	None.
CPU and Hard Drive LEDs			
CPU Power	Off	**OFF**. No power applied to Matrix Security Module.	None.
	Off	**OFF**. Power has been applied to the Matrix Security Module.	Contact Enterasys Networks for technical support.
	Green	**On**. Power has been applied and the CPU is functioning.	None.
Hard Drive Activity	Off	Hard drive is functioning properly but the hard drive is not being accessed.	None.
	Green	**Flashing**. Indicates the hard drive is being accessed	None.

3

Dragon Intrusion Defense System Setup

This section only applies if you installed the 7S-DSNSA7-01, or the 7S-DSNSA7-01NPS, Matrix Security Module that contains the Dragon Intrusion Defense System software.

Pre-Commissioning Tasks

The 7S-DSNSA7-01 and the 7S-DSNSA7-01NPS ship with the Dragon Intrusion Defense System software already installed. Once the MSM has been installed on a Matrix DFE blade in the Matrix chassis, you can commission the MSM Dragon software.

You must do the following prior to commissioning the MSM to run Dragon software:

- Gather Required Information
- Create a User Account

Gather Required Information

You must have the following items to complete the Dragon installation.

- Hostnames
- IP Addresses
- Network Subnet Masks
- The physical paper certificate delivered with your appliance to get your license key file

Note: To get a license key required to operate the Dragon software, you must create a user account. See Create a User Account.

Create a User Account

If you don't already have a user account:

1. Go to the Enterasys Networks Dragon Support Site, https://dragon.enterasys.com, to create a new user account.

   To the right of the screen is the new account entry area. Click **Sign Up!** On the next web page click **Register**. A new page is displayed. Fill in the form completely and click on **New User**. Your user information (ID and password) is emailed to the specified account.

2. Go to the Enterasys Networks Dragon Support Site, https://dragon.enterasys.com, again and log in using the username and password emailed to you.

   You are placed in the protected area of the Dragon Support site. A left side Navigation bar provides links for all activities.

3. Refer to the *Dragon Intrusion Defense System Installation Guide* for license key, and for installation information. This document is available for download from the Dragon Support site.

Commissioning the MSM to Run Dragon

Please read the "Pre-Commissioning Tasks" on page 3-1 before you commission the MSM to run Dragon.

Note: To upgrade the pre-installed software, go to the Enterasys Networks web site to download the latest version of the Enterasys Dragon Intrusion Defense System image. For upgrade instructions, refer to Appendix B, Upgrading Dragon Software.

To commission the MSM to run Dragon:

1. Access the MSM using your access method (for example, serial console or Telnet).

   The Appliance Installation screen appears.

2. Using the arrow keys, select **DEM** as the appliance type, and press **Enter**.

   You are returned to the command prompt. This may take a few minutes.

3. Type **reboot** at the prompt.

   After some time, the login prompt appears.

4. Type **root**, and then press **Enter** twice (until you get to the No Root Password Detected screen).

5. Press **Enter** to accept Yes.

6. Enter your new password, and then press **Enter**.

Note: It is recommended that all passwords be at least eight characters in length.

7. Re-enter your new password, and then press **Enter** until you get to the Configure Network screen.
8. In the Configure Network screen, press **Enter** to accept Yes.

   The Hostname screen appears.
9. Enter a hostname, and then press **Enter**.

   The IP Configuration Type screen appears.
10. Select your IP type, and then press **Enter** to accept OK.

Note: For Dragon-EAL, static is recommended; however, you must evaluate your network environment.

   The IP Address screen appears.
11. Enter the IP address of the appliance, and then press **Enter** to accept OK.

Note: If there are existing default IP addresses, delete them before you enter the IP address of the appliance.

   The Netmask screen appears.
12. Enter the netmask of the appliance, and then press **Enter** to accept OK.

   The Gateway Address screen appears.
13. Enter your gateway address, and then press **Enter** to accept OK.

   The Use a Name Server screen appears.
14. Press **Enter** to accept Yes.

   The Select Name Server screen appears.
15. Enter the name server address, and then press **Enter** to accept OK.

   The Basic Network Configuration Verification screen appears.
16. Verify your information, and then press **Enter** to accept OK. Press **Enter** again in the second verification screen to accept.

   The HW Clock screen appears.
17. In the HW Clock screen, select **HW Clock Set to Local Time**, and then press **Enter** to accept OK.

18. Select the desired Time Zone from the Time Zone menu, and then press **Enter** to accept OK.

    The Enable SNMP screen appears.

19. Select one of the following:

    a. **If you do not want to use SNMP daemon and trap services**:

        (1) Select **NO**, and press **Enter**.

            You are placed in the Dragon Installation screen.

        (2) Go to Step 27.

    OR

    b. **To use the SNMP daemon and trap services**:

        (1) Select **YES** (the default), and press **Enter** to accept.

            The Enter System Contact screen appears.

        (2) Go to step 20.

20. Enter the system contact, and then press **Enter**.

    The System Location screen appears.

21. Enter the system location, and then press **Enter**.

    The Read Community String screen appears.

22. Enter the Read community string and press **Enter**.

    The Write Community String screen appears.

23. Enter the Write community string and press **Enter**.

    The Access Control screen appears.

24. Enter the IP address from which to accept community names and press **Enter**.

    The SNMP trap Destinations screen appears.

25. Enter the IP address of the SNMP trap service and Press **Enter**.

    The trap Community screen appears.

26. Enter the community string for sending traps, and then press **Enter.**

    The appliance commissioning procedure completes. This may take several minutes.

27. You are placed into the Dragon installation. Refer to the *Dragon Intrusion Defense System Installation Guide* for installation procedures and license key information.

4

Enterasys Sentinel Trusted Access Gateway Setup

This section only applies if you installed the 7S-NSTAG-01, or the 7S-NSTAG-01NPS Matrix Security Module (MSM), that contains the Enterasys Sentinel Trusted Access Gateway software.

Pre-Commissioning Tasks

The 7S-NSTAG-01 and the 7S-NSTAG-01NPS ship with the Trusted Access Gateway already installed. Once the MSM has been installed on a Matrix DFE blade in the Matrix chassis, you can commission the MSM to run the Trusted Access Gateway software.

You must have the following information prior to commissioning the MSM to run the Trusted Access Gateway software:

- MSM Hostname, IP address, and netmask
- Gateway IP address
- Management Server IP address

Commission the MSM to Run Trusted Access Gateway

Note: To upgrade the pre-installed software, go to the Enterasys Networks web site to download the latest version of the Enterasys Sentinel Trusted Access Gateway image. For instructions, refer to Appendix C, Upgrading Enterasys Sentinel Trusted Access Gateway Software.

To commission the MSM to run the Trusted Access Gateway software:

1. Access the MSM using your access method (for example, serial console).
2. Log in as **root**, with no password, and then press **Enter**.

   You will receive a warning that there is no root password detected, and asked if you would like to set a root password.

3. Highlight **Yes**, and press **Enter**.
4. Enter the new password, re-enter the password, and press **Enter**.

Note: It is recommended that all passwords be at least eight characters in length.

The CONFIGURE NETWORK screen appears.

5. Highlight **Yes** to configure your network, and press **Enter**.

   The ENTER HOSTNAME screen appears.
6. Enter the hostname for the MSM, then highlight **OK** and press **Enter**.

   The SETUP IP ADDRESS FOR “your host name” screen appears.
7. Select from the following, highlight **OK**, and press **Enter**.
   - **static IP**: uses a static IP address to configure Ethernet
   - **DCHP**: uses a DHCP server to configure Ethernet
   - **loopback**: used to set up a loopback connection (modem or no net)

Note: Static IP is recommended; however, you must evaluate your network environment.

The ENTER IP ADDRESS FOR “your host name” screen appears.

8. Enter the IP Address of the MSM, highlight **OK**, and press **Enter**.

Note: The IP address is automatically configured on the front panel Ethernet port (eth0).

The ENTER NETMASK FOR LOCAL NETWORK screen appears.

9. Enter the netmask of the MSM, highlight **OK**, and press **Enter**.

   The ENTER GATEWAY ADDRESS screen appears.
10. Enter the gateway address for your network, highlight **OK**, and press **Enter**.

Note: If you do not have a gateway on your network, leave the field blank and press **Enter**.

The USE A NAME SERVER screen appears.

11. If you will be accessing a name server, highlight **Yes** and press **Enter**.

    The SELECT NAME SERVER screen appears.

12. Enter the primary name server IP address, highlight **OK** and press **Enter**.

    The CONFIRM NETWORK SETUP screen appears.

13. Verify your information, highlight **ACCEPT**, and press **Enter**. Press **Enter** again in the second verification screen to accept.

    Basic network configuration is complete. The ENTER MANAGEMENT SERVER IP screen appears.

14. Enter the IP address of the management server, highlight **OK** and press **Enter**.

Note: To change the IP address of the management server, type the following command at the MSM CLI: `/opt/tag/configMgmtIP`

    The HW CLOCK screen appears.

15. Select the hardware clock setting, and then the timezone configuration. Highlight **OK**, and press **Enter**.

    The ENABLE SNMP DAEMON screen appears.

16. To monitor the MSM via an SNMP node manager, highlight **YES** and press **Enter**.

    The ENTER SYSTEM CONTACT and then the ENTER SYSTEM LOCATION screens appear.

17. Enter the system contact and the system location. Highlight **OK** and press **Enter**.

    The READ COMMUNITY STRING, WRITE COMMUNITY STRING, ACCESS CONTROL, SNMP TRAP DESTINATION, and the TRAP COMMUNITY screens appear.

18. Enter the read community string, write community string, Access Control (IP address from which to accept community names), SNMP trap destination, and the trap community string.

19. Highlight **OK** and press **Enter**.

20. Commissioning is complete. Reboot the system.

21. During the commissioning process, the MSM IP address is automatically configured on the front panel Ethernet port (eth0). To configure the IP address on a back panel Ethernet port (eth1 or eth2), you must edit the **/etc/rc.d/rc.inet1.conf** file and enter the IP address and netmask in the appropriate place for the interface(s) you want to configure. It is recommended that you do not use DHCP. In addition, at the bottom of the file you can change the default gateway IP address you specified during the commissioning process, if desired.

22. Launch the Enterasys Sentinel Trusted Access Manager from your system:

    Start–>Program Files–>Enterasys Networks–>Enterasys Sentinel Trusted Access Manager

23. If this is your initial commissioning of the MSM, select **Getting Started** from the **Help** pull-down menu for information on using Trusted Access Manager in your network.

    If you are upgrading your Trusted Access Gateway software, be sure to enforce the Trusted Access Gateway (via Trusted Access Manager) following the upgrade operation. Enforcing writes your Trusted Access Manager Security Domain information to the gateway.

Changing Trusted Access Gateway Settings

Use these steps in this section if you need to change your Trusted Access Gateway settings following your initial commissioning.

Changing Basic Network Configuration

To change basic network configuration settings such as MSM hostname and IP address, enter the following command at the MSM CLI:

```
/opt/tag/dnetconfig/
```

This will start the network configuration script and allow you to make the required changes. You must reboot the system for the new settings to take effect.

Changing the Management Server IP Address

To change the IP address of the management server, enter the following command at the MSM CLI:

```
/opt/tag/configMgmtIP <IP address>
```

Then, start using the new management server by typing:

```
tagctl restart
```

Enabling the SNMP Daemon

To enable the SNMP daemon, enter the following command at the MSM CLI:

```
/usr/postinstall/snmpconfig
```

Then, start the SNMP daemon by entering:

```
/etc/rc.d/rc.net-snmp restart
```

If you reboot the MSM, the SNMP daemon will start automatically.

Changing SNMP Passwords

To change SNMP passwords, enter the following commands at the MSM CLI:

```
vi/etc/snmp/snmpd.conf
/etc/rc.d/rc.net-snmp restart
```

A

Specifications

Matrix DFE Module Support

Note: The following lists were complete when this document was published.

The following Matrix DFE modules support the 7S-DSNSA7-01NPS and the 7S-NSTAG-01-NPS:

- 4G4282-49
- 4G4285-49
- 7G4280-19
- 7G4282-49
- 7G4285-49

The following Matrix DFE modules support the 7S-DSNSA7-01 and the 7S-NSTAG-01:

- 4G4282-41
- 4H4282-49
- 4H4283-49
- 4H4284-49
- 4H4285-49
- 7G4282-41
- 7H4284-49
- 7H4382-25
- 7H4382-49
- 7H4383-49
- 7H4385-49

Matrix Security Module Specifications

Table A-1 provides the Input/Output ports, processor and memory, physical, and environmental specifications for the Matrix Security Module (MSM).

Table A-1 Matrix Security Module Specifications

Item	Specification
Ports	
External Gigabit Ethernet Ports (2)	The two external ports provide additional GBIC uplink capabilities, in addition to the available DFE ports. When referring to these ports with DFE CLI commands, use the following syntax to designate port type, slot location, and port number: **ge**.*slot*.*port#* where **ge** is the port type, *slot* is the slot location of the DFE module within the chassis, and *port#* is the port number. The *port #* will be designated as the next sequential **ge** port after the last **ge** port on the DFE module. For example, if the MSM is installed on a DFE module located in slot 1 that provides 18 Gigabit Ethernet ports, then the MSM ports can be referenced as ge.1.19 and ge.1.20 when executing DFE CLI commands. Mini-GBIC slots can be mix-and-match, 1000BASE-SX, -LX, -ELX and 1000BASE-T compliant Mini-GBICs. Refer to "Mini-GBIC Input/Output Specifications" on page A-5.
Internal Gigabit Ethernet Ports (2)	The two internal ports connect to the on-board processor and are used by the installed Dragon Intrusion Defense System or Enterasys Sentinel TAG application. These ports have the same capabilities as any other DFE port. When referring to these ports with DFE CLI commands, use the following syntax to designate port type, slot location, and port number: **pc**.*slot*.*port#* where **pc** is the port type, *slot* is the slot location of the DFE module within the chassis, and *port#* is the port number, either **1** or **2**.
RS 232 Serial COM Port	Provides connection for Local Management.
VGA Port	Provides display monitor connection.

Table A-1 Matrix Security Module Specifications (continued)

Item	Specification
10/100 Ethernet Port	Can be used for management or network connection.
USB Port	Provides USB connection.
Processor/Memory	
Processor	Pentium M 14 GHz Processor
Dynamic Random Access Memory (DRAM)	1 GB
Hard Drive	60 GB 2.5 inch drive
External Power Supply	
AC Input Voltage	100—200V
AC Input Amps	1.5A
Frequency	50-60Hz
DC Output Voltage	12v
DC Output Amps	5A

Table A-1 Matrix Security Module Specifications (continued)

Item	Specification
Physical	
Dimensions	• Width: 10.65 in. (27.05 cm) • Length: 7.3 in. (18.54 cm) • Depth: 1.8 in (4.57 cm)
Predicted hours for Mean Time Between Failures (MTBF)	For the MTBF hours for this module, refer to the MTBF web site at URL http://www.enterasys.com/support/mtbf/
Maximum Wattage	50 Watts
Environmental	
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity	5% to 90% (non-condensing)
Minimum Air Flow	200 Linear Feet / Minute

Mini-GBIC Input/Output Specifications

The Mini-Gigabit Ethernet Card (Mini-GBIC) port interface slots can support 1-Gbps fiber-optic and copper connections as described in Table A-2. The optional Mini-GBICs are hot swappable.

Table A-2 Mini-GBIC Input/Output Port Specifications

Item	Specification
MGBIC-LC01	Provides one LC fiber-optic multimode port that is compliant with the 1000BASE-SX standard and has an LC connector.
MGBIC-LC03	Provides one LC fiber-optic multimode port that is compliant with the 1000BASE-SX standard and has an LC duplex style connector.
MGBIC-LC09	Provides one LC fiber-optic single-mode port that is compliant with the 1000BASE-LX standard and has an LC connector.
MGBIC-MT01	Provides one MT-RJ fiber-optic multimode port that is compliant with the 1000BASE-SX standard and has an MT-RJ connector.
MGBIC-08	Provides one LC fiber-optic single-mode port that is compliant with the 1000BASE-ELX standard and has an LC connector.
MGBIC-02	Provides one RJ45 copper connection that is compliant with the 1000BASE-T standard and has an RJ45 connector.

Gigabit Ethernet Specifications

The following specifications for the Mini-GBICs (shown in Table A-3 through Table A-10) meet or exceed the IEEE 802.3z-1998 standard.

MGBIC-LC01/MGBIC-MT01 Specifications (1000BASE-SX)

Table A-3 MGBIC-LC01/MGBIC-MT01 Optical Specifications

Item	62.5 µm MMF	50 µm MMF
Transmit Power (minimum)	-9.5 dBm	-9.5 dBm
Receive Sensitivity	-17 dBm	-17 dBm
Link Power Budget	7.5 dBm	7.5 dBm

Table A-4 MGBIC-LC01/MGBIC-MT01 Operating Range

Item	Modal Bandwidth @ 850 nm	Range
62.5 µm MMF	160 MHz/km	2-220 Meters
62.5 µm MMF	200 MHz/km	2-275 Meters
50 µm MMF	400 MHz/km	2-500 Meters
50 µm MMF	500 MHz/km	2-550 Meters

MGBIC-LC03 Specifications (1000BASE-SX)

Table A-5 MGBIC-LC03 Optical Specifications

Item	62.5/125 µm MMF	50/125 µm MMF
Transmit Power (minimum)	-9.5 dBm	-9.5 dBm
Transmit Power (maximum)	-3 dBm	-3 dBm
Receive Sensitivity	-20 dBm	-20 dBm
Link Power Budget[1] (Multimode Only)	10.5 dBm	10.5 dBm

1. The maximum drive distance (up to 2 km) depends on the quality of the installed multimode fiber-optic cable segment. Use the Link Power Budget to calculate the maximum cable length of the attached segment. The Link Power Budget must not exceed those specified in this table. The MGBIC-LC03 input power must not exceed -3 dBm. Otherwise, saturation could occur.

MGBIC-LC09 Specifications (1000BASE-LX)

Table A-6 MGBIC-LC09 Optical Specifications

Item	62.5 µm MMF	50 µm MMF	10 µm MMF
Transmit Power (minimum)	-11.5 dBm	-11.5 dBm	-9.5 dBm
Receive Sensitivity	-20 dBm	-20 dBm	-20 dBm
Link Power Budget	8.5 dBm	8.5 dBm	10.5 dBm

Table A-7 MGBIC-LC09 Operating Range

Item	Modal Bandwidth @ 1300 nm	Range
62.5 µm MMF	500 MHz/km	2-550 Meters
50 µm MMF	400 MHz/km	2-550 Meters
50 µm MMF	500 MHz/km	2-550 Meters
10 µm SMF	N/A	2-10,000 Meters

MGBIC-08 Specifications (1000BASE-ELX)

Table A-8 MGBIC-08 Optical Specifications

Item			
Transmit Power (minimum)	-0 dBm, min.	+2 dBm, typical	+5 dBm, max.
Receive Sensitivity	-24 dBm, min.	-26 dBm, typical	
Maximum Input Power	-3 dBm		
Link Power Budget[1] (Full Duplex Only)	23 dB	28 dB, typical	

1. The maximum drive distance (up to 70 km) depends on the quality of the installed single-mode fiber-optic cable segment. Use the Link Power Budget to calculate the maximum cable length of the attached segment. The Link Power Budget must not exceed those specified in this table. The MGBIC-08 input power must not exceed -3 dBm. Otherwise, saturation could occur.

Table A-9 MGBIC-08 Operating Range

Item	1550 nm	Range
9 or 10 µm SMF	N/A	70,000 Meters

MGBIC-02 Specifications (1000BASE-T)

Table A-10 MGBIC-02 Specifications

Item	Specification
Supported Cable	
Type	Copper, Category 5 UTP
Maximum Length	Up to 100 meters
Connector	RJ45
Data Rate	1 Gbps, IEEE 802.3:2000 compatible 1000BASE-T operation only Automatic crossover detection
TX Output impedance	100 ohms, typical at all frequencies between 1 MHz and 125 MHz
RX Input impedance	100 ohms, typical at all frequencies between 1 MHz and 125 Hz

COM Port Pinout Assignments

The COM port is a serial communications port for local access to Local Management. Refer to Table A-11 for the COM port pin assignments.

Table A-11 COM Port Pin Assignments

Pin	Signal Name	Input/Output
1	Transmit Data (XMT)	Output
2	Clear to Send (CTS)	Input
3	Data Set Ready (DSR)	Input
4	Receive Data (RCV)	Input
5	Signal Ground (GND)	NA
6	Request to Send (RTS)	Output
7	Data Terminal Ready (DTR)	Output
8	Data Carrier Detect (DCD)	Input

B

Upgrading Dragon Software

This Appendix describes the procedure to upgrade the Dragon Intrusion Defense System software.

Note: To upgrade, you must have a CD-ROM to burn the image onto, and a CD-ROM drive with a USB connector to connect to the MSM.

1. If you don't already have a user account, you must create one. Refer to "Create a User Account" on page 3-2 for instructions.
2. Go to the Enterasys Networks web site to download the Enterasys Dragon image to burn onto a CD, https://dragon.enterasys.com
3. Click on **Release Software** located on the left side of the page.
4. Click on the latest Dragon *X.X* Download. The latest release is usually at the top of the page.
5. Download the ISO image file to a system.
6. Burn the image onto a CD.
7. Attach the USB CD-ROM drive to the USB port on the MSM.
8. Access the MSM using your access method (for example, serial console or Telnet).
9. Press the power button, and then press **F2** to go to the BIOS setup.
10. Use the arrow keys to navigate to **BOOT** option.
11. Ensure that USB CD-ROM drive is listed as Priority 1. If it is not, move it to Priority 1.
12. **Save** on Exit.
13. Insert the CD into the USB CD-ROM drive.
14. The MSM starts booting from the USB CD-ROM.

    When booting is complete, the Dragon Appliance Installation screen appears.
15. Select **DSM - Dragon Security Module - Daughter Card** from the menu options.

    You are returned to the prompt.

16. Type **`mount /dev/sr0 /cdrom`**, and press **Enter**.

Note: There must be a space between sr0 and /cdrom.

17. Type **`/sbin/install dsm`**, and press **Enter**.

Notes:

- You may need to **`cd`** to **`sbin`**, and then enter **`install dsm`**.
- The installation will take approximately ten minutes.
- Verify that the LED is red, or flashing red, on the appliance.
- When the installation is complete:
  - The CD should eject. If the CD does not eject automatically, you must manually remove the CD.
  - You are returned to prompt.

18. Ensure that the CD is removed.
19. Type **`reboot`**, and press **Enter**.
20. Disconnect the USB CD-ROM drive.
21. Reconnect the USB connector to the MSM.

    The Dragon login screen appears.
22. Refer to the *Dragon Intrusion Defense System Installation Guide* for installation procedures and license key information.

C

Upgrading Enterasys Sentinel Trusted Access Gateway Software

This Appendix describes the procedure to upgrade the Enterasys Sentinel Trusted Access Gateway software on the MSM module.

1. Go to the Enterasys Networks web site to download the **TAG.zip** file to your system: http://www.enterasys.com/products/management/downloads
2. Extract the **TAG.zip** file to a directory on your system.
3. Insert the USB flash drive that came with the MSM module into the USB port on your system, and note the drive letter it is assigned.
4. Open a command prompt window and cd to the directory where you extracted the **TAG.zip** file.
5. Type **`make_disc.bat <drive letter>:`** and press **Enter**.

   The files will be copied to the USB flash drive. When the copy is complete you will see the message "Successfully installed into <drive letter>: Press any key to continue."
6. Remove the USB flash drive from your system.
7. Insert the USB flash drive into the USB port on the MSM module.
8. Reboot the MSM module, and then press **F2** to go to the BIOS setup.
9. Use the arrow keys to navigate to **BOOT** option.
10. Ensure that the USB flash drive is listed as Priority 1. If it is not, move it to Priority 1.
11. **Save** on Exit.
12. The MSM module starts booting from the USB flash drive.
13. When the boot is complete, the Appliance Installation screen appears.

    Select **MSM** as the appliance type, and press **Enter**. The installation begins.
14. After the installation completes, reboot the MSM module and then remove the USB flash drive.

15. Proceed to Chapter 4, Commission the MSM to Run Trusted Access Gateway, and follow the instructions for commissioning the MSM.

    If you are upgrading your Trusted Access Gateway software, be sure to enforce the Trusted Access Gateway (via Trusted Access Manager) following the upgrade operation. Enforcing writes your Trusted Access Manager Security Domain information to the gateway.